



Dart Hawkesbury  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D212-664-101**  
**Job Sheet 168062**



Part No: D212-664-101

Job Qty: 1 ea

Part Name: Fwd Crosstube - High



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/9/17

Job Tracking No:

Due Date: 11/21/17

Created By: Linda Lacelle

Type: Stock

Description:

Customer: Ascent Helicopters Ltd (CASCE01)

1550 Springhill Road Parksville, BC, V9P 2Y2 Canada ph:(250) 752-2981 fx:(250) 752-2983.

Note: DWG REV E IPP Rev:E 04.02.16 Reformat KJ/DS IPP Rev:F 06-03-29 Remove Comments on Pick List JLM IPP  
Rev:G 07-04-30 As per Rev C JLM IPP Rev:H 11.04.26 inspection strip ecn 11-549 EC verf by:DD IPP REV:I  
14.05.27 AS PER ECN 14-570 DD VERF:JLM

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation           | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |                  | Sign-off     |
|-------|---------------------|-------|------------|----------|-----------|---------|-----------------------|------------------|--------------|
|       |                     |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time        |              |
| 90    | Start up Operation  | 1 Ea  | 11/20/17   | 11/20/17 | 0.00      | 0.00    | Start Up Stores/Pkg1  |                  | DPZ          |
| 110   | Packaging           | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | Packaging1            |                  | GP           |
| 120   | CNC Bend Crosstubes | 1 pcs | 11/20/17   | 11/20/17 | 3.11      | 2.22    | CNC Bend Crosstube    |                  | GP           |
| 130   | QC                  | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | QC15                  |                  | PS 11-12-20  |
| 140   | Crosstubes          | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.67    | Crosstube             |                  | DPZ          |
| 150   | HandFXtube          | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.98    | HandFinish5           |                  | DPZ          |
| 160   | QC                  | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | QC7                   |                  | 38 DAS       |
| 165   | QC                  | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | QC5                   |                  | 38 38 38     |
| 170   | Outsource           | 1 pcs | 11/20/17   | 11/20/17 |           |         | SKY002-VC             | P0035748/5-01-10 |              |
| 180   | Packaging           | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | Packaging2            |                  | 5218-01-10   |
| 190   | QC                  | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | QC5                   |                  | JAN 1        |
| 200   | SprayPaint          | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.25    | Spray Paint           |                  | JAN 2 3 2018 |
| 210   | QC                  | 1 pcs | 11/20/17   | 11/20/17 | 0.00      | 0.00    | QC14                  |                  | JAN 2 3 2018 |
| 220   | Crosstubes          | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 1.69    | Crosstube             |                  | JAN 2 3 2018 |
| 230   | QC                  | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 0.00    | QC5                   |                  | JAN 2 3 2018 |
| 240   | Packaging           | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 0.00    | Packaging1            |                  | JAN 2 6 2018 |
| 250   | QC                  | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 0.00    | QC4                   |                  | SmB          |
| 255   | DC                  | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 0.00    | DC                    |                  |              |
| 260   | Packaging           | 1 pcs | 11/21/17   | 11/21/17 | 0.00      | 0.00    | Packaging3            |                  | SmB          |
| 270   | QC21-FG             | 1 Ea  | 11/21/17   | 11/21/17 | 0.00      | 0.00    | QC21                  |                  | fg035        |

Part Op 120 - Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and Folio D212-664-101

Descriptions: 140 - "1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549, using drill table DT8577, set-up towers in hole #7 as per QSI 10 2-Ream hole to finish size in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141 4-\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\* Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141"

150 - \*\*\*IMMEDIATELY AFTER GRINDING\*\*\*

170 - \*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\* Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order P0035748 JAN 10 2017

180 - Ensure copy of NDT results attached to work order.

190 - \*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\* Inspect for damage & ensure results are as per

**DART**  
AEROSPACE  
**S030986**

**Dart Aerospace Ltd.**  
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Hawkesbury, ON K64 1K7  
CANADA  
TEL.: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com



**Fwd Crosstube - High**

**PART NO: D212-664-101**  
**Revision:**  
**Operation: Outsource**  
**Change No: CHG006**

**Mfg Date: 01/10/18**  
**Job No: 168062**



Dwg D212-664-141

200 - \*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\* 1-Prime inside & outside crosstube as per QSI 005 4.2 BATCH: 138669 2- After painting remove masking and apply matte clear coat per QSI005 4.2 3- MASK UNDERSIDE OF CROSSTUBE AS SHOWN ON DWG BEFORE PAINTING 4 -Paint Outside of Tube as per Dart QSI 005 4.2 Primer 138646 Clear P.O. 38689. Paint White paint: 138669  
210 - Then, Wrap in plastic bag to protect from scratches  
220 - \*\*\*\*\*LAY DOWN CROSSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP, USE HOLE IN TAPE MEASURE TO PUT IN PINS FOR LOCATING CENTER OF CROSSTUBE. \*\*\*\*\* 1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg 2- Install supports with Proseal 890 per D212-664-141 and QSI 015 A/R Proseal 890 Batch: 138708 EXP: 5/18  
PROSEAL CURE TIME 72 HOURS: Start: 12-1-23 Finish: 12-1-26 3- Install clamps with rubber cushion (ENSURE CLAMPS ARE INSTALL ON TOP SIDE OF CROSSTUBE) using DT9565 as per Dwg D212-664-141. \*\*\*Torque all clamps to 80-100 IN-LBS.\*\*\*  
230 - \*\*\*RE-CHECK TORQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.\*\*\*  
250 - \*\*\*VERIFY BY \_\_\_\_\_ BATCH # TO MATCH W/O \_\_\_\_\_  
255 - Photocopy bluefile and create labels as per PPP D212-664-101 CHG006  
260 - Identify and pack for shipping as per PPP D212-664-101 Location : FG094

### Job Allocations

| Operation             | Component Part                                                               | Required | Inventory | Allocated | Std Qty |
|-----------------------|------------------------------------------------------------------------------|----------|-----------|-----------|---------|
| 90-Start up Operation | <u>5017748</u> D212-664-101TRN                                               | 1        | 1         | 0         | 0       |
| 240-Packaging         | <u>5006326</u> AN6-35A                                                       | 4        | 35        | 0         | 0       |
|                       | <u>5017097</u> - AN6-36A                                                     | 4        | 37        | 0         | 0       |
|                       | <u>P159495</u> - D3428-1                                                     | 1        | 19        | 0         | 0       |
|                       | <u>9616881</u> - MS21042L6                                                   | 6        | 226       | 0         | 0       |
| 320- x tubes          | <u>FM138040-2</u> - NAS1149D0663J                                            | 18       | 645       | 0         | 0       |
| 000019                | <u>D2843-1</u> <u>5032424</u> (2)<br><u>D3585-063-150</u> <u>5033985</u> (1) |          |           |           |         |

### Part Specifications

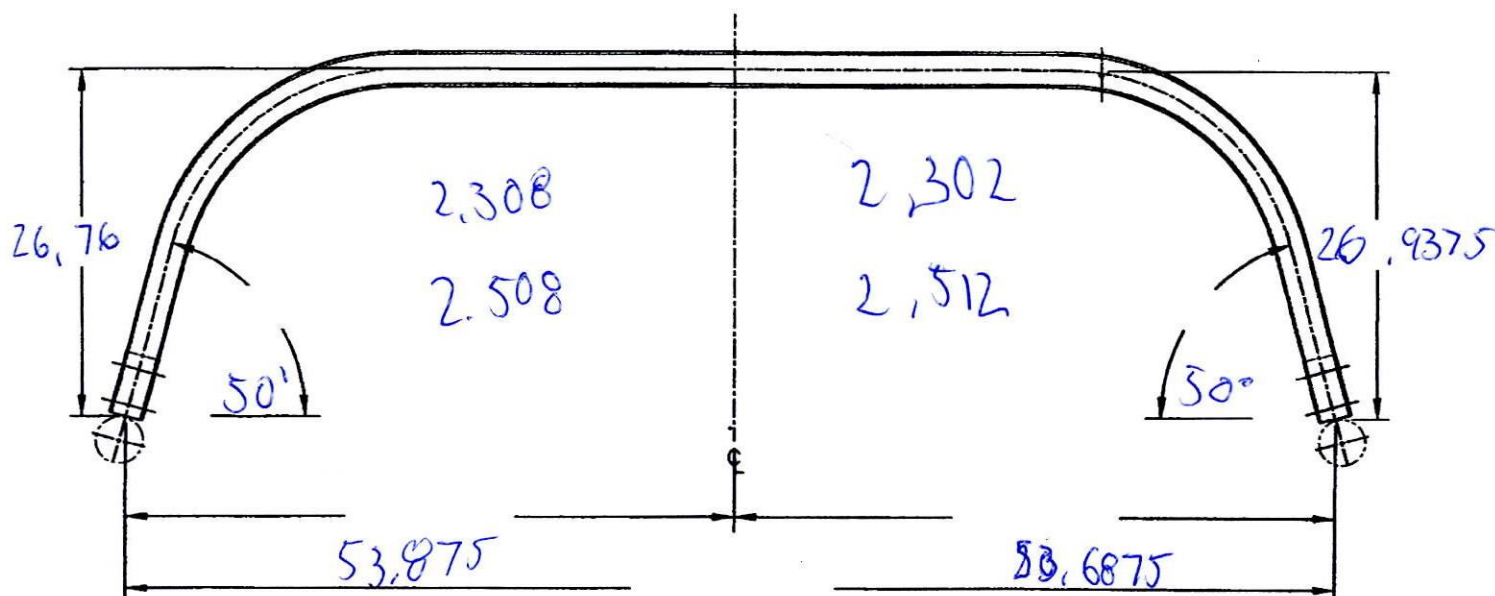
M521920-25 M138441-169 (4)

Specifications could not be found.

Plex 11/10/17 11:55 AM dart.lacelle.linda

|                                                      |                     |                     |
|------------------------------------------------------|---------------------|---------------------|
| <b>DART AEROSPACE LTD</b>                            | <b>Work Order:</b>  |                     |
| <b>Description:</b> Crosstube High Fwd (205/212/412) | <b>Part Number:</b> | <b>D212-664-101</b> |
| <b>Inspection Dwg:</b> D212-664-141 <b>Rev:</b> E    |                     | <b>Page 1 of 1</b>  |

| Required Dimension | Min    | Max   |
|--------------------|--------|-------|
| Height             | 26.67  | 27.17 |
| 1/2 Span           | 53.59  | 53.85 |
| Angle              | 49     | 52    |
| Total Span         | 107.18 | 107.7 |
| Bending Passes     | 3      | --    |
| Crushing           | --     | 7.2%  |



|                       | Side A | Side B |
|-----------------------|--------|--------|
| <b>Bending Passes</b> | 5      | 4      |
| <b>Crushing</b>       | 4.2%   | 4.3    |
| <b>Comments</b>       |        |        |
|                       |        |        |
|                       |        |        |
|                       |        |        |
|                       |        |        |

|                        |          |
|------------------------|----------|
| <b>QC15 Inspection</b> | PD       |
| <b>Date</b>            | 17-12-20 |

| Rev | Date     | Change                             | Revised by | Approved |
|-----|----------|------------------------------------|------------|----------|
| A   | 07.02.06 | New Issue                          | KJ/JM      |          |
| B   | 08.04.21 | Dwg Rev updated                    | KJ/JM      |          |
| C   | 10.04.01 | Dwg Rev updated                    | KJ         |          |
| D   | 12.04.16 | Added bending, crushing dimensions | KJ         |          |
| E   | 14.07.28 | Revised max crushing %             | KJ         |          |
| F   | 16.01.15 | Revised Height min/max dimensions  | KJ         |          |





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO038748

**Supplier:** SKY002-VC  
Skyservice  
6120 Midfield Road  
Mississauga  
ON  
L5P 1B1 Canada  
Phone: 905-678-5636  
Fax: 905-678-5841

**PO No:** PO038748

**PO Date:** 1/9/18

**Due Date:** 1/9/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Phone:

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**

JAN 10 2018

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

## Items

| Line Item | Job      | Part         | Description                                                                                                                                                                               | Status | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (CAD) | Extended Price |
|-----------|----------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|----------------|-------------------|---------|------------------|----------------|
| 1         | 168062   | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |
| 2         | 168758-B | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |
| 3         | 168758   | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |
| 4         | 168758-A | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |
| 5         | 169743   | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |
| 6         | 169740   | D212-664-101 | Fwd Crosstube - High<br>*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid                                                                                                           | Firmed | 1/9/18   | 1 pcs          | 0 pcs             | 1 pcs   | \$133.125/pcs    | \$133.13       |

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

|                          |                               |               |                    |
|--------------------------|-------------------------------|---------------|--------------------|
| WO #: MWO34561           | Customer: Dart Aerospace Ltd. | Dept: NDT YUL | Reference: PO38748 |
| Descr:                   | PN:                           | S/N:          | Qty: 1             |
| Make:                    | Model:                        | Reg:          | A/C S/N:           |
| TSN:                     | CSN:                          | TSO:          |                    |
| Task: <b>UNSCHEDULED</b> |                               |               | Sequence: 1        |

**Work Required:**

CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 8 CROSSTUBES

ITEM ID: D212-664-101 FWD CROSSTUBE HIGH

1 - WORK ORDER ID#: 169744

2 - WORK ORDER ID#: 169742

3 - WORK ORDER ID#: 169740

4 - WORK ORDER ID#: 169743

5 - WORK ORDER ID#: 168758-A

6 - WORK ORDER ID#: 168758

7 - WORK ORDER ID#: ~~168758-B~~

8 - WORK ORDER ID#: 168062

8018-01-10

| <b>Action Taken:</b>                                                                          |          |     |     |       |         | Date:         | Initial/Stamp:                           |
|-----------------------------------------------------------------------------------------------|----------|-----|-----|-------|---------|---------------|------------------------------------------|
| LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-8) AS PER ASTM1417M-13 |          |     |     |       |         | 4 JAN<br>2018 | <div>DOT-APP<br/>61<br/>53-49</div><br>f |
| NO CRACK FOUND                                                                                |          |     |     |       |         |               |                                          |
| Pen: ZL-27A MWO5678 DEV: SKD-S2 MPO11715 CLEANER: SKC-S MPO13923                              |          |     |     |       |         |               |                                          |
| Description                                                                                   | Location | P/N | Qty | Batch | S/N Off | S/N On        |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |
|                                                                                               |          |     |     |       |         |               |                                          |

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

|            |                    |                                         |                        |
|------------|--------------------|-----------------------------------------|------------------------|
| Signature: |                    | ACA/SCA Stamp<br>DOT-APP<br>61<br>53-49 | Date:<br>9 JAN<br>2018 |
| Name:      | ANTONINO Marchetti |                                         |                        |